

# An advocacy for Vaidya-Scientists in Ayurvedic research

Ashok D. B. Vaidya

Kasturba Health Society, ICMR Advanced Centre of Reverse Pharmacology in Traditional Medicine, Mumbai, India

*“Those who have handled sciences have been either men of experiment or men of dogmas. The men of experiment are like ants; they only collect and use: the reasoners resemble spiders, which make cobwebs out of their own substance. But the bee takes a middle course, it gathers its materials from the flowers of the garden and of the field, but transforms and digests it by a power of its own.”*

—Sir Francis Bacon<sup>[1]</sup>

## INTRODUCTION

Research is a lifelong passion. It is driven by a restless curiosity that is refined by meticulous attention to the minutest details. Research necessitates high self-esteem, advanced skills, robust knowledge and humility. The last quality bespeaks of the fact that science is a collective global enterprise. All this requires years of apprenticeship and training. Currently we do not have adequate numbers of scientists with dual competences in both Ayurveda and basic sciences. Without such a critical mass, it is unrealistic to expect high quality research.

It is desirable to fill such a lacuna by creating a new genre of Vaidya-Scientists. This is not meant even remotely to imply that Vaidyas are not scientists or that physicians cannot do science. Vaidya-Scientist is proposed as a category like physician-scientists or clinical researcher, which are rare species even in modern biomedicine.

Physician-scientists need in-depth training in medicine as well as research methodology during their MD-PhD programs. Similarly, Vaidya-Scientists, who opt for academic or industrial Ayurvedic research, would need a special niche in institutions, and careful nurture and support by research

councils. Daniel Cahill, a neurosurgeon-scientist, found that even in the United States of America no more than 10 institutions were suitable for him to do research on the genetics of brain tumors as well as to practice neurosurgery.<sup>[2]</sup> He diagnosed the problem well, “The tricky part is trying to find a place where you can get general exposure to patients and focused, protected (research) time. You have to balance how you are going to set all that up. You have to be successful in the laboratory, but by the same token, a major part of your research is driven by the care of patients. So you have to find a way to do all that and still be able to sleep.”

## VAIDYA-SCIENTIST

Currently there is no well-defined path of career development for Vaidya-Scientists. The field of Ayurvedic research needs a renaissance and not mere revivalism. For such a renaissance, we need the brightest young vaidyas, with a burning curiosity for new knowledge, to train as Vaidya-Scientists at the top centers of Ayurvedic research. The research output by such well-trained Ayurveda scientists will greatly enhance the quality of the original contributions to the new, recently launched, Ayurveda journals. We suggest that the Department of AYUSH, Ministry of Health and Family Welfare, Government of India should urgently evolve and support MD-PhD programs for this purpose. Other philanthropic foundations like Tata Trust, Hinduja Foundation, Birla Trust and such should also support such educational activities. Melinda and Bill Gates Foundation, the National Center of Complementary and Alternative Medicine (NCCAM), and the Prince of Wales Foundation, should evolve and support the advanced training required for faculty. The latter has to be very carefully selected, so as to provide excellence in the MD-PhD research training.

In the USA, eleven promising physician-scientist shared a total of \$4 million from the Howard Hughes Medical Institute. This was proper support for their initiation into academic careers.<sup>[3]</sup> Vaidya - Scientists who chose to become MD-PhDs may be recognized by providing appropriate career development awards. A nationwide program for at least 100 Vaidya - Scientists is needed urgently.

### Address for correspondence:

Dr. Ashok D. B. Vaidya,  
Research Director, Kasturba Health Society, ICMR Advanced  
Centre of Reverse Pharmacology in Traditional Medicine,  
Mumbai - 400 056, India.  
E-mail: mmrckhs@gmail.com

Received: 27-Oct-2009

Revised: 01-Dec-2009

Accepted: 04-Dec-2009

DOI: 10.4103/0975-9476.59818

Vaidya-Scientists, during their undergraduate years need to be exposed to life sciences relevant to Ayurveda research. That would equip them for the MD-PhD career path. There should be encouragement to rotate at Centers of Excellence in Ayurvedic Research. Even end-in-sight clinical research with laboratory components can be conducted. There is a proposal with the Department of AYUSH that it should sponsor a multi-author textbook on life sciences for Ayurveda to assist MD-PhD training in Ayurveda.

## J-AIM SCOPE

The scope for research in Ayurveda has expanded significantly; therefore J-AIM has considered three broad themes: 1) Theoretical research 2) Experimental research and 3) Clinical research. The subsets of these categories have also been described. Theoretical research in fundamental principles of Ayurveda has a potential for major paradigm shifts in bio-medicine. For example, understanding the scientific correlates of *Gunas*, *Doshas*, *Dhatus* and *Malas* would better define the prognostic sets and subsets in the taxonomy of disease. The uniqueness of concepts like *Pragnyaparadha*, *Ritucharya*, *Pathya-Prakriti* and *Kayakalpa* would be an insistent invitation for research in life sciences. Experimental research in Ayurveda, while respecting the Baconian method, should transcend it by innovative research paths. The latter should not neglect the modes of evidence in Ayurveda viz. *Apta*, *Pratyaksha*, *Anumana*, *Upamana* and *Yukti*.<sup>[4,5]</sup> Clinical research in Ayurveda offers the most fruitful domain for new knowledge. As Ayurveda is currently practiced by more than 700,000 vaidyas, the realm of Ayurvedic bed-side observation is rich and relatively unexplored. The emphasis in clinical research has to be on evidence based, diverse in modes of validity: consensual, congruent and concurrent. There is also an urgent need for translational research in Ayurveda.<sup>[6]</sup> The leaders of Ayurvedic research need to emphasize the aforesaid dimensions in MD-PhD programs.

Recently several interesting paths have been evolved for research and development in Ayurveda. For natural product drug discovery, Ayurvedic Pharmacoepidemiology and Reverse Pharmacology have been well initiated and partly followed up.<sup>[7-10]</sup> Ayurvedic Pharmacoepidemiology can provide rich data on drug utilization, safety and novel activities. Reverse Pharmacology then make use of such data to embark on its three stages: experiential, exploratory and experimental. The Reverse Pharmacology path has led to several hits of drug-like activities in medicinal plants. Leads have targeted mechanisms with well-defined plant extracts. As a result, plant principles have

been identified as drug candidates with good safety and efficacy. Successful examples of this path include: *Kutaki* (*Picrorhiza kurroa*) for viral hepatitis, *Atmagupta* (*Mucuna pruriens*) for Parkinson's disease, *Haridra* (*Curcuma longa*) as a cancer-preventive, *Amruta* (*Tinospora cordifolia*) as an immunomodulator, and *Ashwagandha* (*Withania somnifera*) in anxiety neurosis.<sup>[11-18]</sup>

## CONCLUSION

Let us heed Sir Francis' warning of not creating ant-like heaps or spider-webs, but rather let us engage ourselves, in a challenging spirit, with the daunting task of unraveling the myths and realities of Ayurveda. This demands a neologism — Ayurvedia — a term coined by the great Indian mathematician philosopher Lokmanya Bal Gangadhar Tilak.

## REFERENCES

1. Bacon F. Novum Organum, The Philosophers of Science. In: Commins S, Linscott RN, editors. New York: Modern Pocket Library; 1954. 74-158.
2. Hede K. The Job Outlook for Physician-Scientists. Science Career Magazine. 2008 (December 05).
3. Physician-Scientists Get Spark From HHMI Early Career Award. 2009 [cited July 07, 2009]; Available from: <http://www.hhmi.org/news/ecps20090707.html>
4. Vaidya AB, Raut AA. Evidences based Ayurveda Sorting fact from fantasy. In Ayurveda and its Scientific Aspects -Opportunities for Globalisation. New Delhi: Department of AYUSH and C. S. I. R.; 2006. 1-39.
5. Raut AA, Vaidya RA, Vaidya AB. Prerequisites of methods of good research practice in Ayurveda. Aryavaidyan 2004;18:23-9.
6. Thomas C. Between bench and bedside-which research manuscripts are truly translational? Gastroenterology 2009;136:1484-6.
7. Patwardhan B, Vaidya AB, Chorghade M. Ayurveda and natural products drug discovery. Curr Sci 2004;86:789-99.
8. Vaidya AB. Reverse Pharmacological correlates of Ayurvedic drug action, Sir Ram Nath Chopra Oration. Indian J Pharmacol 2006;38:311-5.
9. Patwardhan B, Mashelkar R. Traditional Medicine-inspired approaches to drug discovery: can Ayurveda show the way forward? Drug Discov Today 2009;14:804-11.
10. Vaidya RA, Vaidya AB, Patwardhan B, Tillu G, Rao Y. Ayurvedic pharmacoepidemiology: a proposed new discipline. J Asso Physicians India 2003;51:528.
11. Vaidya AB, Rajgopalan TG, Mankodi NA, Antarkar DS, Tathed PS, Purohit AV, et al. Treatment of Parkinson's disease with the cowhage plant-*Mucuna pruriens* Bak. Neurol India 1978;26:171-6.
12. Katzenschlager R, Evans A, Manson A, Patsalos PN, Ratnaraj N, Watt H, et al. *Mucuna pruriens* in Parkinson's disease: a double blind clinical and pharmacological study. J Neurol Neurosurg Psychiatry 2004;75:1672-7.
13. Vaidya AB, Antarkar DS, Doshi JC, Bhatt AD, Ramesh V, Vora PV, et al. *Picrorhiza kurroa* (Kutaki) Royle ex Benth as a hepatoprotective agent-experimental and clinical studies. J Postgrad Med 1996;42:105-8.
14. Gupta PP. Picroliv: hepatoprotectant immunomodulator. Drugs of the Future. 2001;26(1):25-31.

15. Bamaev V, Aggarwal, B. B., Fiala, M., Majeed, M., Golombick, T., Diamond, T. Curcuminoids from *Curcuma longa* in the fight against cancer and age related disorders. Australian Journal of Medical Herbalism, 2008.
16. Joshi J, Ghaisas S, Vaidya AB, Vaidya RA, Kamat DV, Bhagwat AN, *et al.* Early human safety study of turmeric oil (*Curcuma longa oil*). J Assoc Physicians India 2003;51:1055-60.
17. Monograph: *Withania somnifera*. Altern Med Rev 2004;9:211-4.
18. Mishra LC, Singh BB, Dagenais S. Scientific basis for the therapeutic use of *Withania somnifera* (Ashwagandha): a review. Altern Med Rev 2000;5:334-46.

**Source of Support:** Nil, **Conflict of Interest:** None declared.